

**IN THE SPECIFICATION:**

Page 11, delete the forth paragraph:

Page 18, delete the last full paragraph and insert the following new paragraph:

A1 The transducer drive circuitry of power transformer 86 shown in FIG. 3B may be represented by an equivalent electrical circuit having components  $C_o$ ,  $L_s$ ,  $C_s$ , and  $R_s$  which form a transducer equivalent circuit  $T_{equiv}$ , where  $C_o$  is a shunt capacitance and represents the electrical capacitance of the piezoelectric elements of the piezoelectric transducer 36 shown in FIG. 2.

Page 19, delete the entire page 19 and insert the following new page 19:

A2  $L_s$ ,  $C_s$  and  $R_s$  form an electrical equivalent of the overall mechanical system and collectively represent the mechanical branch.  $L_s$  is the effective mass of the system,  $C_s$  is the effective compliance and  $R_s$  represents mechanical losses associated with friction, internal material dissipation and/or the power delivered to the tissue.

An Inductor  $L_t$  is also provided and is matched to the shunt capacitance  $C_o$  at the resonance of the ultrasonic system, such as approximately 55.5 kHz. Hence,  $L_t$  and  $C_o$  electrically cancel each other at the resonant frequency. As a result, all of the drive current will flow through the mechanical branch. This helps to ensure that the ultrasonic excursion of the transducer is primarily proportional to the drive current.

Two resistors  $R_p/2$  sum in series to a resistance of  $R_p$ . This resistance helps to

establish an upper limit of the overall impedance of the output circuit, and also establishes an upper limit for the drive voltage. In preferred embodiments,  $R_p$  is a relatively large resistance. At resonance, the parallel combination of  $R_p$  and  $R_s$  is effectively  $R_s$ , because  $R_s$  is much smaller than  $R_p$ , even when coagulating and cutting tissue.

A series combination of capacitors  $C_{v1}$  and  $C_{v2}$  is used to form a voltage divider.

Q2 Together these capacitors reduce the high voltage that typically drives the transducer to a level which is appropriate for signal processing by integrated circuits (not shown). A transformer  $V_t$  couples the reduced voltage to the feedback circuitry (voltage sense 92 of FIG. 3B) and also provides isolation between the drive circuitry and the other circuitry of the generator.

A small voltage drop is provided across a series combination of resistors  $R_3$  and  $R_4$ .

In the preferred embodiment, the series combination is a relatively low

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Page 20, delete the second full paragraph and insert the following new paragraph:

A pair of resistors  $R_1$ ,  $R_2$  is used to establish a minimum impedance level to the

Q3 control circuitry for use in the control algorithms. The resistance is divided between two output arms  $V_{out1}$ ,  $V_{out2}$  of the power transformer to help mitigate electromagnetic radiation and leakage current.

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